Official Test Material Pictures, Test Patterns and Audio Signals

(FCC Advisory Committee on Advanced Television Service)

ATTC ID #	Name	Test Application

I. Static (Still) Pictures [Source PS/WP6]

S1	Metal Table & Chairs	Luminance resolution (P)
S2	Vines	Luminance resolution (BU); Training or demo image
S3	Wavy Wall	Luminance rendition (P)
S4	Columns	Luminance dynamic range (P)
S5	Tulips	Chrominance resolution (P); Noise impairment (P)
S6	Sculptures	Chrominance resolution (BU); training or demo image
S7	Fruits & Vegetables	Color gamut (P)
S8	Toys	Chrominance dynamic range (P)
S9	Girl with Toys	Peripheral performance (P); Interference (P)
S10	Memorial Arch	Depth portrayal (P)
S11	Woman with Roses	Noise impairment (P); Interference (P)
S12	Lorain Harbour	Noise impairment (BU); training or demo image
S13	Flower on Plate	Multipath (BU); Microreflections [?]
S14	[Graphics]	Basic received quality, electronic graphics still

(P) = Primary image. (BU) = Back up image.

II. Dynamic (Motion) Sequences [Source: PS/WP6]

• Live Television Camera

M1	Window	Basic received quality, luminance resolution, low acceleration.
M2	Copier	Basic received quality, dynamic luminance resolution, high acceleration.
M3	Variety Store	Basic received quality, dynamic chrominance resolution, low acceleration.
M4	Mannequins	Basic received quality, dynamic chrominance resolution, high acceleration.
M5	Living Room	Basic received quality, motion rendition, camera.
M6	Den	Basic received quality, motion rendition, single object in-scene movement.
M7	Park Ride	Basic received quality, motion rendition, multiple object in-scene movement.
M8	Bubbles	Basic received quality, motion rendition, multiple object in-scene movement.
M9	Audience	Basic received quality, motion rendition, multiple object in-scene movement.
M10	Man and Room	Basic received quality, motion rendition, camera & in-scene movement combined.
M11	Desk Lamp	Noise and other impairment.
M12	Times Square	Multipath and microreflections.
M13	Map	[Transconvertor, only?].
M14	Co-channel	Desired for co-, adjacent, & taboo channel interference. Desired/Undesired for ATV-to-ATV.
M15	Primary	Undesired for ATV-to-NTSC and NTSC-to-ATV interference.

• Computer Generated Graphics

M16	[Graphics]	Basic received quality, electronic graphics sequence

• Film Origination

M17	[Film 1]	Basic received quality, film transfer
M18	[Film 2]	Basic received quality, film transfer
M19	[Film 3]	Basic received quality, film transfer
M20	[Film 4]	Basic received quality, film transfer (Showscan)

Dynamic (Motion) Sequences, continued.

- Dynamic Resolution Wheel (Live Television Camera) [Source: ATTC]

M21	[Pattern 1]	Dynamic resolution. Temporal artifacts (EO&C)
M22	[Pattern 2]	Dynamic resolution. Temporal artifacts (EO&C)
M23	[Pattern 3]	Dynamic resolution. Temporal artifacts (EO&C)
M24	[Pattern 4]	Dynamic resolution. Temporal artifacts (EO&C)
M25	[Pattern 5]	Dynamic resolution. Temporal artifacts (EO&C)
M26	[Pattern 6]	Dynamic resolution. Temporal artifacts (EO&C)

III. Test Patterns (Static and Dynamic) [Source: ATTC]

T1	Flat Field. Static (50%). NTSC	NTSC Desired for interference.
T2	Flat Field. Static (50%). ATV	ATV Desired. for threshold
T3	Flat Field. Dynamic	ATV Desired for threshold. alternate
T4	Line Rate Ramp	Chrominance component dynamic range
T5	Radial Resolution Pattern (G)	Temporal response
T6	2T30 Pulse & Window	Temporal response
T7	Color Bars	Color difference compatibility; E-NTSC S/N
T8	Matrix (G) (S)	Tx signal spectrum
T9	Text	Point of Unusability: Multipath threshold of visibility
T10	Double Windows[1] (G)	Transient response
T11	Zone Plate[2] (static, moving)	Temporal response
"T99"	(Place holder)	(Video source for "voice-over" instructions on rating tapes-- not a true test signal.)

"(G)" = Pattern may be gated to system under test.
"(S)" = Pattern may be displayed as split screen with gray field.
1 (1 static+ 3 V rates + 3 H rates) x 4 levels = 28 patterns
2 Manual settings determined from technical analysis of each system.

IV. Audio Test Signals [Source: PS/WP6; origins--as noted]

A1	Susanne Vega [A&M 395 136-2, track 1]	Quality
A2	Tracy Chapman [Elektra 960 774-2, track 6]	Quality, Tx Impairment
A3	Glockenspiel [EBU SQAM 422 204-2, track 35/1]	Quality, Tx Impairment
A4	Fireworks [Pierre Verany 788031, track 1]	Quality
A5	Ornette Coleman [Dreams, track 7]	Quality
A6	Bass Synthesizer [Special R-DAT (M-PEG)]	Quality
A7	Castanets [EBU SQAM 422 204-2, track 27]	Quality
A8	Male Speech [Japan Audio Soc. CD-3, track 17/2]	Quality, Tx Impairment
A9	Bass Guitar [Special R-DAT (M-PEG)]	Quality
A10	Haydn Trumpet Conc [Philips 420 203-2, track 10]	Quality

Unofficial/Demonstration Materials (For proponent, ATTC/CableLabs/CRC, etc. Demos)

- (#7) Dynamic sequences (video origin) derived from PS/WP6 shoot--available to proponents by _____. [Source: PS/WP-6]

- (#?) Static pictures and/or test patterns [Source: ____]

8. TEST METHODS FOR INDIVIDUAL IMPAIRMENTS

This section details the particular test method to be used for a given impairment. In some cases an impairment will be first tested by ranging and then by rating so it will appear more than once in the following lists.

8.1. ATV Threshold of Visibility

- Discrete Frequency Interference
- Impulse Noise

8.2. ATV Threshold of Visibility and Point of Unusability

- Multipath
- Airplane Flutter
- UHF Taboos
- Cable ICPM
- Cable Second Order Intermodulation
- Cable Hum and Low-Frequency Noise

8.3. ATV Ranging (3 "D" levels except as noted)

- Random Noise (1 "D" level)
- Co-Channel Interference (2 "D" levels)
- Upper Adjacent Channel Interference (2 "D" levels for Enhanced-NTSC systems)
- Lower Adjacent Channel Interference (2 "D" levels for Enhanced-NTSC systems)
- Cable Third Order Intermodulation (1 "D" level)

8.4. ATV Transmission Impairment Rating (3 "D" levels except as noted)

- Random Noise (1 "D" level)
- Co-Channel Interference (2 "D" levels)
- Upper Adjacent Channel Interference (2 "D" levels for Enhanced-NTSC systems)
- Lower Adjacent Channel Interference (2 "D" levels for Enhanced-NTSC systems)
- Cable Third Order Intermodulation (1 "D" level)

8.5. NTSC Received ATV Threshold of Visibility and Point of Unusability (Enhanced-NTSC systems only)

- Random Noise
- Multipath
- Airplane Flutter
- Impulse Noise (TOV only)

8.6. NTSC Calibration

- Random Noise
- Co-Channel Interference
- Lower-Adjacent Channel Interference
- Upper-Adjacent Channel Interference
- UHF Taboos

8.7. **NTSC Ranging** (3 "D" levels except as noted)

- Co-Channel Interference (2 "D" levels)
- Upper Adjacent Channel Interference (2 "D" levels for Enhanced-NTSC systems)
- Lower Adjacent Channel Interference (2 "D" levels for Enhanced-NTSC systems)
- Linear UHF Taboos (2 "D" levels for Enhanced-NTSC systems)
- Non-Linear UHF Taboos

8.8. **NTSC Transmission Impairment Rating** (3 "D" levels except as noted)

- Co-Channel Interference (2 "D" levels)
- Upper Adjacent Channel Interference (2 "D" levels for Enhanced-NTSC systems)
- Lower Adjacent Channel Interference (2 "D" levels for Enhanced-NTSC systems)
- One Selected Linear UHF Taboo (2 "D" levels for Enhanced-NTSC systems)
- One Selected Non-Linear UHF Taboo

8.9. **Quality Rating**

- ATV Basic Quality
- NTSC Reception Quality (Enhanced-NTSC systems only)
- ATV Cable Quality
- ATV Fiber Quality

8.10. **Expert Observation and Comment**

- ATV Limiting Resolution
- NTSC-Compatible Limiting Resolution
- VCR Compatibility for Enhanced NTSC
- Cable High-Level Sweep

Government of Canada
Department of Communications

Gouvernement du Canada
Ministère des Communications

ADVANCED TELEVISION EVALUATION LABORATORY
(COMMUNICATIONS RESEARCH CENTRE)

Suite 109, 600 Terry Fox Drive · Kanata (Ontario), CANADA · K2L 4B6
Telephone: *613* 592-1727 · Facsimile: *613* 592-4398

Your file *Votre reference*

Our file *Notre reference*

VIA FACSIMILE

21 January 1991

Mr. Mark Richer
Chairman, FCC-ACATS/SSWP2

Mr. Robert Hopkins
Chairman, FCC-ACATS/SSWP1

Mr. Hugo Gaggioni
Chairman, FCC-ACATS/SSWP1 Task Force on Data Format

Dear Sirs:

To present the results of the ATV Subjective Tests, the Advanced Television Evaluation Laboratory plans to prepare seven (7) reports. Six (6) Single-System Reports will be prepared to present the results obtained for each system individually. Under current plans, these Reports would be presented to the Advisory Committee shortly after completion of the tests for the systems to which they refer. A single, Overall Report will be prepared to bring the results presented in the Single-System Reports together in a single, coherent document. Under current plans, this Report would be presented to the Advisory Committee shortly after completion of the sixth Single-System Report.

I have attached, for review by the groups in your charge, DRAFT descriptions of the two types of Reports proposed. I am, of course, at your disposal should you require further information or wish to suggest ways in which the Reports could be made more responsive to need.

Sincerely yours

Paul J. Hearty
Director
Advanced Systems Evaluation

Canada

Report 1.

ADVANCED TELEVISION EVALUATION LABORATORY
(Communications Research Centre, Canada)

RESULTS OF ADVANCED TELEVISION SUBJECTIVE TESTS

[DRAFT OUTLINE] SINGLE-SYSTEM REPORT

SYSTEM TESTED:

TESTS (DATES): ATV RATING TESTS:

ATV Quality:
- ATV Basic Quality ( )
- ATV Cable Quality ( )
- ATV Fibre Quality ( )

ATV Impairment/Interference:
- Random Noise ( )
- Co-Channel (ATV-to-ATV) ( )
- Lower Adjacent Channel (ATV-to ATV) ( )
- Upper Adjacent Channel (ATV-to-ATV) ( )
- Co-Channel (NTSC-to-ATV) ( )
- Lower Adjacent Channel (NTSC-to ATV) ( )
- Upper Adjacent Channel (NTSC-to-ATV) ( )
- Cable 3rd Order Intermodulation ( )

NTSC RATING TESTS:

NTSC Quality:
- NTSC Reception Quality ( )

NTSC Interference:
- Co-Channel (ATV-to-NTSC) ( )
- Lower Adjacent Channel (ATV-to NTSC) ( )
- Upper Adjacent Channel (ATV-to-NTSC) ( )
- Linear UHF Taboo (ATV-to-NTSC) ( )
- Non-Linear UHF Taboo (ATV-to NTSC) ( )

SIGN-OFFS:

Representative of Test Laboratory	*Date*
Representative of Proponent	*Date*
Representative of FCC-ACATS	*Date*
Representative of [CDN Organization]	*Date*

ATV SUBJECTIVE TESTS OF [SYSTEM X]

ATV RATING TESTS

ATV Quality. This section will consist of three (3) tables of the form given in Table 1. There will be one (1) such table for each of:

- ATV Basic Quality;
- ATV Cable Quality; and,
- ATV Fibre Quality.

ATV Impairment/Interference. This section will consist of a single table of the form given in Table 2. This table will involve concatenated entries for:

- Random Noise;
- Co-channel Interference (ATV-to-ATV);
- Lower Adjacent Channel Interference (ATV-to-ATV);
- Upper Adjacent-Channel Interference (ATV-to-ATV);
- Co-channel Interference (NTSC-to-ATV);
- Lower Adjacent Channel Interference (NTSC-to-ATV);
- Upper Adjacent Channel Interference (NTSC-to-ATV); and,
- Cable 3rd Order Intermodulation.

NTSC RATING TESTS

NTSC Quality. This section, which applies only to NTSC-compatible systems, will consist of one (1) table of the form given in Table 1. This will summarize results for:

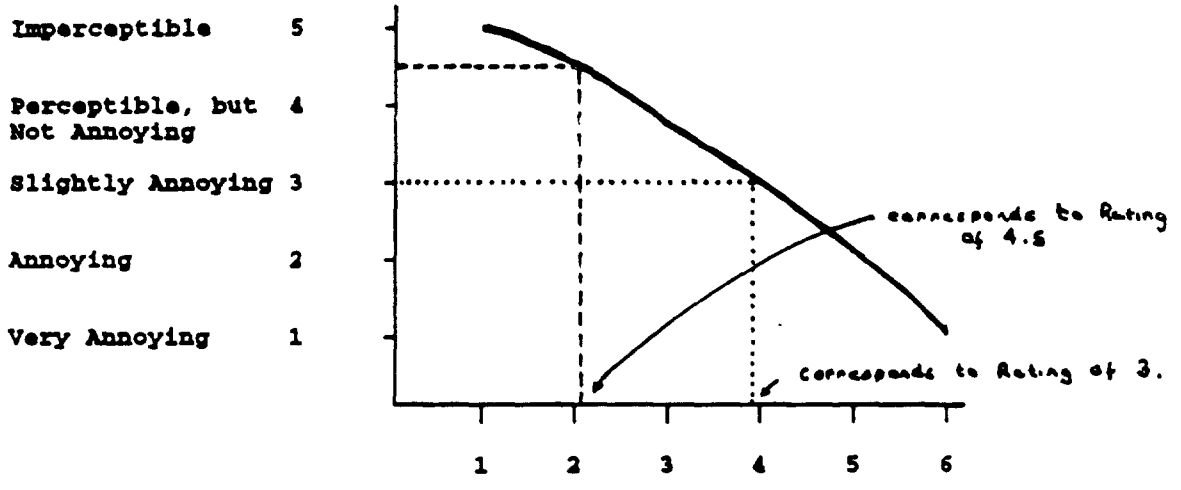
- NTSC Reception Quality.

Interference to NTSC. This section will consist of a single table of the form given in Table 2. This will involve concatenated entries for:

- Co-channel Interference (ATV-to-NTSC);
- Lower Adjacent Channel Interference (ATV-to-NTSC);
- Upper Adjacent Channel Interference (ATV-to-NTSC);
- Linear UHF Taboo (ATV-to-NTSC); and,
- Non-Linear UHF Taboo (ATV-to-NTSC).

ANNEX

The Annex will consist of series of graphs giving the results of all Impairment/Interference tests carried out. These graphs will take the form:



The graphs will present mean impairment rating as a function of the level of impairment introduced (e.g., in dB, C/N, or D/U) and, as appropriate, as a function of Desired-signal level.

TABLE 1: GENERIC FORMAT FOR SINGLE-SYSTEM QUALITY TEST RESULTS

Picture Quality Attribute	Test Item	Scores						NOTES
		Reference		Test		100-(Ref-Test)		
		X	SD	X	SD	X	SD	
STILL:	Ss 1-n							Across stills, is sys. significantly better/worse than ref.?
Stat luma Resol								Item-by-item, is sys. significantly better/worse than ref.? Item-by-item, notes and comments.
Stat Chroma Resol								
Luma Rendition								
Luma Dynamic Range								
Color Gamut/ Rend								
Color Dyn Range								
Depth Portrayal								
Peripheral Performance								
Elect Gen Material								
MOTION:	Ms 1-n							Across sequences, is sys. significantly better/worse than ref.?
Dyn Luma Resol 1								Item-by-item, is sys. significantly better/worse than ref.? Item-by-item, notes and comments.
Dyn Luma Resol 2								
Dyn Chroma Resol 1								
Dyn Chroma Resol 2								
Motion Rend Camera								
Motion Rend Scene 1								
Motion Rend Scene 2								
Motion Rend Scene 3								
Motion Rend Scene 4								
Motion Rend (comb.)								
Elect Gen Material								
Film (24 fps)								
Film (30 fps)								
Film (60 fps)								

COMMENTS: Notes on any factors, occurrences, observations which might influence the interpretation of results described in the table.

TABLE 2: GENERIC FORMAT FOR SINGLE-SYSTEM IMPAIRMENT/INTERFERENCE TEST RESULTS

Impairment/Interference	Test Item	Associated Level of Impairment (Interpolated)				NOTES
		Rating = 4.5		Rating = 3		
		X	SD	X	SD	
RANDOM NOISE	Sx-y; Mz					Across stills and sequences, means and SDs.
Still 1 Still 2 Motion 1		4.5 is between "imperceptible" & "perceptible, but not annoying"; rough est of threshold.		3 is "slightly annoying"; rough est of point at which sys. is unacceptable.		Item-by-item, notes and comments.
COMMENTS: Notes on any factors, occurrences, observations, which might influence the interpretation of results described in Random Noise.						
CO-CHANNEL (D1, FROM ATV)	Sx-y; Mz					Across stills and sequences, means and SDs for Desired signal level 1.
Desired 1: Still 1 Desired 1: Still 2 Desired 1: Motion 1						Item-by-item, notes and comments.
CO-CHANNEL (D2, FROM ATV)	Sx-y;Mz					Across stills and sequences, means and SDs for Desired signal level 1.
Desired 2: Still 1 Desired 2: Still 2 Desired 2: Motion 1						Item-by-item, notes and comments.
COMMENTS: Notes on any factors, occurrences, observations, which might influence the interpretation of results described in Co-Channel (from ATV).						

Impairment/Interference Table Continues.

ADVANCED TELEVISION EVALUATION LABORATORY
(Communications Research Centre, Canada)

RESULTS OF ADVANCED TELEVISION SUBJECTIVE TESTS

[DRAFT OUTLINE] OVERALL REPORT

SYSTEMS TESTED: COMPATIBLE SYSTEMS:

System 1 (proponent)

SIMULCAST SYSTEMS:

System 2 (proponent)
System 3 (proponent)
System 4 (proponent)
System 5 (proponent)
System 6 (proponent)

TESTS COVERED: ATV RATING TESTS:

ATV Quality:

ATV Basic Quality
ATV Cable Quality
ATV Fibre Quality

ATV Impairment/Interference:

Random Noise
Co-Channel (ATV-to-ATV)
Lower Adjacent Channel (ATV-to ATV)
Upper Adjacent Channel (ATV-to-ATV)
Co-Channel (NTSC-to-ATV)
Lower Adjacent Channel (NTSC-to ATV)
Upper Adjacent Channel (NTSC-to-ATV)
Cable 3rd Order Intermodulation

NTSC RATING TESTS:

NTSC Quality:

NTSC Reception Quality

NTSC Interference:

Co-Channel (ATV-to-NTSC)
Lower Adjacent Channel (ATV-to NTSC)
Upper Adjacent Channel (ATV-to-NTSC)
Linear UHF Taboo (ATV-to-NTSC)
Non-Linear UHF Taboo (ATV-to NTSC)

SIGN-OFFS:

Representative of Test Laboratory	*Date*
Representative of Proponent	*Date*
Representative of FCC-ACATS	*Date*
Representative of [CDN Organization]	*Date*

OVERALL RESULTS OF ATV SUBJECTIVE TESTS

ATV RATING TESTS

ATV Quality. This section will consist of three (3) tables of the form given in Table 1. There will be one (1) such table for each of:

- ATV Basic Quality;
- ATV Cable Quality; and,
- ATV Fibre Quality.

ATV Impairment/Interference. This section will consist of (2) two tables of the forms given in Tables 2 and 3. Each table will involve concatenated entries for:

- Random Noise;
- Co-channel Interference (ATV-to-ATV);
- Lower Adjacent Channel Interference (ATV-to-ATV);
- Upper Adjacent-Channel Interference (ATV-to-ATV);
- Co-channel Interference (NTSC-to-ATV);
- Lower Adjacent Channel Interference (NTSC-to-ATV);
- Upper Adjacent Channel Interference (NTSC-to-ATV); and,
- Cable 3rd Order Intermodulation.

NTSC RATING TESTS

NTSC Quality. This section, which applies only to NTSC-compatible systems, will consist of one (1) table of the form given in Table 1. This will summarize results for:

- NTSC Reception Quality.

Interference to NTSC. This section will consist of two (2) tables of the forms given in Tables 2 and 3. Each will involve concatenated entries for:

- Co-channel Interference (ATV-to-NTSC);
- Lower Adjacent Channel Interference (ATV-to-NTSC);
- Upper Adjacent Channel Interference (ATV-to-NTSC);
- Linear UHF Taboo (ATV-to-NTSC); and,
- Non-Linear UHF Taboo (ATV-to-NTSC).

TABLE 1: GENERIC FORMAT FOR OVERALL QUALITY TEST RESULTS

Picture Quality Attribute	Test Item	Scores: 100-(Ref-Test): X, SD, and Rank for Systems 1-6						NOTES
		Sys 1 X SD R	Sys 2 X SD R	Sys 3 X SD R	Sys 4 X SD R	Sys 5 X SD R	Sys 6 X SD R	
STILL:	Se 1-n							Across stills, means, SDs, Ranks.
Stat luma Resol								Item-by-item, notes and comments.
Stat Chroma Resol								
Luma Rendition								
Luma Dynamic Range								
Color Gamut/ Rend								
Color Dyn Range								
Depth Portrayal								
Peripheral Performance								
Elect Gen Material								
MOTION:	Ms 1-n							Across stills, means, SDs, Ranks.
Dyn Luma Resol 1								Item-by-item, notes and comments.
Dyn Luma Resol 2								
Dyn Chroma Resol 1								
Dyn Chroma Resol 2								
Motion Rend Camera								
Motion Rend Scene 1								
Motion Rend Scene 2								
Motion Rend Scene 3								
Motion Rend Scene 4								
Motion Rend (comb.)								
Elect Gen Material								
Film (24 fps)								
Film (30 fps)								
Film (60 fps)								

COMMENTS:
Notes on any factors, occurrences, observations which might influence the interpretation of results described in the table.

TABLE 2: GENERIC FORMAT FOR OVERALL IMPAIRMENT/INTERFERENCE TEST RESULTS

Impairment/Interference	Test Item	Associated Level of Impairment (Interpolated) FOR SYSTEMS 1-6 Rating = 4.5; X, SD, and Rank						NOTES
		Sys 1 X SD R	Sys 2 X SD R	Sys 3 X SD R	Sys 4 X SD R	Sys 5 X SD R	Sys 6 X SD R	
RANDOM NOISE	Sx-y; Mx							Across stills & segs, means, SDs, Ranks.
Still 1 Still 2 Motion 1								Item-by-item, notes and comments.
COMMENTS: Notes on any factors, occurrences, observations, which might influence the interpretation of results described in Random Noise.								
CO-CHANNEL (D1, FROM ATV)	Sx-y; Mx							Across stills & segs, means, SDs, Ranks for Desired Signal Level 1.
Desired 1: Still 1 Desired 1: Still 2 Desired 1: Motion 1								Item-by-item, notes and comments.
CO-CHANNEL (D2, FROM ATV)	Sx-y;Mx							Across stills & segs, means, SDs, Ranks for Desired Signal Level 2.
Desired 2: Still 1 Desired 2: Still 2 Desired 2: Motion 1								Item-by-item, notes and comments.
COMMENTS: Notes on any factors, occurrences, observations, which might influence the interpretation of results described in Co-Channel (from ATV).								

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Impairment/Interference Table continues.

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TABLE 3: GENERIC FORMAT FOR OVERALL IMPAIRMENT/INTERFERENCE TEST RESULTS

Impairment/Interference	Test Item	Associated Level of Impairment (Interpolated) FOR SYSTEMS 1-6 Rating = 3; X, SD, and Rank						NOTES
		Sys 1 X SD R	Sys 2 X SD R	Sys 3 X SD R	Sys 4 X SD R	Sys 5 X SD R	Sys 6 X SD R	
RANDOM NOISE	Sx-y; Mz							Across stills and sequences, means, SDs, Ranks.
Still 1								Item-by-item, notes and comments.
Still 2								
Motion 1								
COMMENTS: Notes on any factors, occurrences, observations, which might influence the interpretation of results described in Random Noise.								
CO-CHANNEL (D1, FROM ATV)	Sx-y; Mz							Across stills & seqs, means, SDs, Ranks for Desired Signal Level 1.
Desired 1: Still 1								Item-by-item, notes and comments.
Desired 1: Still 2								
Desired 1: Motion 1								
CO-CHANNEL (D2, FROM ATV)	Sx-y;Mz							Across stills & seqs, means, SDs, Ranks for Desired Signal Level 2.
Desired 2: Still 1								Item-by-item, notes and comments.
Desired 2: Still 2								
Desired 2: Motion 1								
COMMENTS: Notes on any factors, occurrences, observations, which might influence the interpretation of results described in Co-Channel (from ATV).								

Impairment/Interference Table continues.

CableLabs
Cable Television Laboratories, Inc.

1991 January 24

Mr. H. Gaggioni
Chairman, SS/WP-4 Task Force on Data Collection
Sony Advanced Systems
3 Paragon Drive
Montvale, New Jersey 07645

Dear Hugo:

I have enclosed the first draft of report sheets for the "cable only" portion of the advanced TV tests. These sheets summarize the results determined by the experts observing the impaired ATV signals.

Please have your task force review the draft sheets any let me know if you agree with them or desire any changes

Sincerely yours,

Brian James,
Director - ATV Testing

cc: C. Tanner
B. Crutchfield

1330 Braddock Place, Suite 200 • Alexandria, Virginia 22314-1650 • Telephone: 703/739-3670 • Fax: 703/548-5750

DRAFT SAMPLE DATA LIST : typical data to be taken/output for a test 10/19/90

Test Director _____ Date _____
Proponent representative _____
Expert observers _____ _____ _____ _____ _____

1.3.1. **Luminance Static Horizontal Resolution** Test Schedule Sequence # ___

Type of test: EO&C, 5 expert observers Test signal(s): _____
(Test pattern, photo, motion sequence, etc.)

PICTURE MONITOR: [OUTPUT DATA]

Limiting horizontal resolution of the center area, in C/APH [1 to 5] Agreed or mean _____ C/APH

_____ C/APH _____ C/APH _____ C/APH
_____ C/APH _____ C/APH

ZPG coefficients [10]
(1) _____ (2) _____ (3) _____ (4) _____ (5) _____
(6) _____ (7) _____ (8) _____ (9) _____ (10) _____

Limiting resolution of the side panels, in C/APH. [1 to 5] Agreed or mean _____ C/APH*

_____ C/APH _____ C/APH _____ C/APH
_____ C/APH _____ C/APH

ZPG coefficients [10]
(1) _____ (2) _____ (3) _____ (4) _____ (5) _____
(6) _____ (7) _____ (8) _____ (9) _____ (10) _____

PHOTOGRAPH: All conditions under which data were taken [2]
1. ID # _____ 2. ID # _____*

VIDEO TAPE RECORD: All conditions under which data were taken [2]
Time code 1 _____ Time code 2 _____*

WAVEFORM MONITOR:

Half-amplitude resolution response of the center area, in C/APH [1 to 5] Agreed or mean _____ C/APH
_____ C/APH _____ C/APH _____ C/APH
_____ C/APH _____ C/APH

ZPG coefficients [10]
(1) _____ (2) _____ (3) _____ (4) _____ (5) _____
(6) _____ (7) _____ (8) _____ (9) _____ (10) _____

Half-amplitude resolutionof the side panels, in C/APH. [1 to 5] Agreed or mean _____ C/APH*
_____ C/APH _____ C/APH _____ C/APH
_____ C/APH _____ C/APH

ZPG coefficients [10]
(1) _____ (2) _____ (3) _____ (4) _____ (5) _____
(6) _____ (7) _____ (8) _____ (9) _____ (10) _____

PHOTOGRAPH: All conditions under which data were taken [2]
1. ID # _____ 2. ID # _____*

VIDEO TAPE RECORD: All conditions under which data were taken [2]
Time code 1 _____ Time code 2 _____*

* Data taken only where side panels are transmitted differently from center.

Low Frequency Noise Modulation

Test Date: _____ ATV Carrier Freq.: _____ ATV System: _____

Video Tape Number: _____ Time Code: _____ Test Engineer: _____

Test Data Accepted By: _____

Expert Observers

1: _____ 2: _____ 3: _____

4: _____ 5: _____

Interference Levels

Threshold of Visibility of Interference: _____%

Point of Unusability: _____%

Range Ratios 1: ____ 2: ____ 3: ____ 4: ____ 5: ____ 6: ____ 7: ____%

Recording Levels 1: ___ 2: ___ 3: ___ 4: ___ 5: ___ 6: ___ 7: ___ 8: ___ %

Comments

360 Hz (Hum) Modulation

Test Date: _____ ATV Carrier Freq.: _____ ATV System: _____

Video Tape Number: _____ Time Code: _____ Test Engineer: _____

Test Data Accepted By: _____

Expert Observers

1: _____ 2: _____ 3: _____

4: _____ 5: _____

Interference Levels

Threshold of Visibility of Interference: _____%

Point of Unusability: _____%

Range Ratios 1: ____ 2: ____ 3: ____ 4: ____ 5: ____ 6: ____ 7: ____%

Recording Levels 1: ___ 2: ___ 3: ___ 4: ___ 5: ___ 6: ___ 7: ___ 8: ___ %

Comments

120 Hz (Hum) Modulation

Test Date: _____ ATV Carrier Freq.: _____ ATV System: _____

Video Tape Number: _____ Time Code: _____ Test Engineer: _____

Test Data Accepted By: _____

Expert Observers

1: _____ 2: _____ 3: _____

4: _____ 5: _____

Interference Levels

Threshold of Visibility of Interference: _____%

Point of Unusability: _____%

Range Ratios 1: ____ 2: ____ 3: ____ 4: ____ 5: ____ 6: ____ 7: ____%

Recording Levels 1: ___ 2: ___ 3: ___ 4: ___ 5: ___ 6: ___ 7: ___ 8: ___ %

Comments

60 Hz (Hum) Modulation

Test Date: _____ ATV Carrier Freq.: _____ ATV System: _____

Video Tape Number: _____ Time Code: _____ Test Engineer: _____

Test Data Accepted By: _____

Expert Observers

1: _____ 2: _____ 3: _____

4: _____ 5: _____

Interference Levels

Threshold of Visibility of Interference: _____%

Point of Unusability: _____%

Range Ratios 1: ____ 2: ____ 3: ____ 4: ____ 5: ____ 6: ____ 7: ____%

Recording Levels 1: ___ 2: ___ 3: ___ 4: ___ 5: ___ 6: ___ 7: ___ 8: ___ %

Comments

Composite Second Order (50/50) Interference

Test Date: _____ ATV Carrier Freq.: _____ ATV System: _____

Video Tape Number: _____ Time Code: _____ Test Engineer: _____

Test Data Accepted By: _____

Expert Observers

1: _____ 2: _____ 3: _____

4: _____ 5: _____

Interference Levels

Threshold of Visibility of Interference: _____dBc

Point of Unusability: _____dBc

Range Ratios 1: ____ 2: ____ 3: ____ 4: ____ 5: ____ 6: ____ 7: ____dBc

Recording Levels 1: ___ 2: ___ 3: ___ 4: ___ 5: ___ 6: ___ 7: ___ 8: ___ dBc

Comments

Composite Second Order (ATV) Interference

Test Date: _____ ATV Carrier Freq.: _____ ATV System: _____

Video Tape Number: _____ Time Code: _____ Test Engineer: _____

Test Data Accepted By: _____

Expert Observers

1: _____ 2: _____ 3: _____

4: _____ 5: _____

Interference Levels

Threshold of Visibility of Interference: _____dBc

Point of Unusability: _____dBc

Range Ratios 1: ____ 2: ____ 3: ____ 4: ____ 5: ____ 6: ____ 7: ____dBc

Recording Levels 1: ___ 2: ___ 3: ___ 4: ___ 5: ___ 6: ___ 7: ___ 8: ___ dBc

Comments